

Notice of Allowability

Application No.

09/991,108

Examiner

Longbit Chai

Applicant(s)

BURROWS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/23/2007.
2. ☒ The allowed claim(s) is/are 1,4-7,9-17,20-22,25-36,39,40 and 44.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 4/23/2007.

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____

**AYAZ SHEIKH****SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**

DETAILED ACTION

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dan C. Hu (Reg. No. 40,025) on 4/23/2007.

This application has been amended as follows:

IN THE CLAIMS

Cancel claims **2, 3, 8, 18, 19, 23, 24, 37, 38, 41 – 43 and 45 – 63** without prejudice.

Replace claim **1, 4, 20, 21, 22, 25, 29, 31, 39 and 40** as follows.

Claim 1:

A method for limiting the impact of undesirable behavior of computers on a network through which packets of data are interchanged between the computers, comprising:

monitoring the network for any patterns of behavior;

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determining, upon discovering that one or more of the patterns of behavior is undesirable, a type of the undesirable pattern of behavior;

determining a proper action for mitigating that type of undesirable behavior, the proper action including preventing dissemination through the network of packets associated with the undesirable behavior and allowing dissemination of packets not associated with the undesirable behavior,

wherein preventing dissemination comprises at least one of changing a routing table, changing a forwarding table, turning off at least one port of a forwarding device, filtering on Internet Protocol (IP) addresses, and filtering on media access control (MAC) addresses, and

wherein a discovery, including that of a network topology, facilitates the network monitoring and type of undesirable behavior determination, and

wherein the dissemination through the network of packets associated with the undesirable behavior is prevented for a time period that is lengthened gradually as long as the undesirable behavior continues or intermittently reappears, the time period being gradually shortened if the undesirable behavior stops for a predetermined time.

Claim 4:

The method of claim [[3]] 1, wherein the time period corresponds to a skepticism level that depends on a history of the undesirable pattern of behavior, a skepticism level zero (0) denoting a good history.

Claim 20:

The method of claim [[2]] 1, wherein ~~understanding~~ discovery of the network topology facilitates disablement of ports in forwarding devices that connect to offending computers.

Claim 21:

The method of claim [[3]] 1, wherein the time period becomes longer in a random exponential backoff before an attempt is made to allow resumption of the packets from any offending computer that originated the undesirable pattern of behavior, the time period becoming longer if the undesirable pattern of behavior reoccurs during a current backoff time, the time period becoming shorter if the undesirable pattern of behavior disappears and does not reoccur in the current backoff time.

Claim 22:

A system for limiting the impact of undesirable behavior of computers on a network through which packets of data are interchanged between the computers, comprising:

means for monitoring the packets for any patterns of behavior;

means for determining, upon discovering that one or more of the patterns of behavior is undesirable, a type of the undesirable pattern of behavior;

means for determining a proper action for mitigating that type of undesirable behavior, the proper action, performed by mitigation means, including preventing dissemination through the network of packets associated with the undesirable behavior and allowing dissemination of packets not associated with the undesirable behavior,

wherein preventing dissemination comprises at least one of changing a routing table, changing a forwarding table, and turning off at least one port of a forwarding device, and

wherein means for discovery, including that of a network topology, facilitates network monitoring and type of undesirable behavior determination, and

wherein the dissemination through the network of packets associated with the undesirable behavior is prevented for a time period that is lengthened gradually as long as the undesirable behavior continues or intermittently reappears, the time period being gradually shortened if the undesirable behavior stops for a predetermined time.

Claim 25:

The system of claim [[24]] 22, wherein the time period corresponds to a skepticism level that depends on a history of the undesirable pattern of behavior, a skepticism level zero (0) denoting a good history.

Claim 29:

The system of claim 22, wherein preventing the dissemination of packets associated with the undesirable pattern of behavior includes discarding the packets associated with such behavior, isolating any of the computers at which such behavior originates, or isolating any network segments at which such behavior originates.

Claim 31:

The system of claim [[23]] 22, wherein the undesirable pattern of behavior is a broadcast storm, and wherein the monitoring means includes means for learning the topology of the network from a forwarding database or table of a forwarding device in the network.

Claim 39:

The ~~method~~ system of claim [[23]] 22, wherein ~~understanding~~ discovery of the network topology facilitates disablement of ports in forwarding devices that connect to offending computers.

Claim 40:

The system of claim [[24]] 22 wherein the time period becomes longer in a random exponential backoff before an attempt is made to allow resumption of the packets from any offending computer that originated the undesirable pattern of behavior, the time period becoming longer if the undesirable pattern of behavior reoccurs during a current backoff time, the time period becoming shorter if the undesirable pattern of behavior disappears and does not reoccur in the current backoff time.

Allowable Subject Matter

1. Claims 1, 4 – 7, 9 – 17, 20 – 22, 25 – 36, 39, 40 and 44 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The above mentioned claims are allowable over prior arts because the CPA (Cited Prior Art) of record fails to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited in independent claims 1, 10 and 16 (& associated dependent claims).

The prior arts fail to teach or suggest a method for limiting the impact of undesirable behavior of computers on a network through which packets of data are interchanged between the computers by determining a proper action for mitigating the type of undesirable behavior, the proper action including preventing dissemination through the network of packets associated with the undesirable behavior and allowing dissemination of packets not associated with the undesirable behavior, wherein preventing dissemination comprises at least one of changing a routing table, changing a forwarding table, turning off at least one port of a forwarding device, filtering on Internet Protocol (IP) addresses, and filtering on media access control (MAC) addresses, and wherein a discovery, including that of a network topology, facilitates the network monitoring and type of undesirable behavior determination, and wherein the dissemination through the network of packets associated with the undesirable behavior is prevented for a time period that is lengthened gradually as long as the undesirable

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behavior continues or intermittently reappears, the time period being gradually shortened if the undesirable behavior stops for a predetermined time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788. The examiner can normally be reached on Monday-Friday 8:00am-4:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LBC

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